

REMARKS

Claims 1-8, 10 and 11 are pending in the instant application. Claims 3-5 and 11 stand objected to for various deficiencies. Claims 1-9 and 11 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 1-5, 7, 8, and 11 stand rejected under 35 U.S.C. §102(a) as being anticipated by United States Patent No. 6,340,348 to Krishnan et al. Claim 6 stands rejected under 35 U.S.C. §103(a) over Krishnan et al. The application has been amended. The claims have been amended. Claims 1 and 5-8 have been amended. Claims 2-4 and 11 have been canceled. Applicants respectfully submit that none of the amendments constitute new matter in contravention of 35 U.S.C. §132. Reconsideration is respectfully requested.

Claim Objections

Claims 3-5 and 11 stand objected to for various deficiencies. In view of the amendments to claims 1 and 5 and the cancellation of claims 3, 4 and 11 hereinabove, Applicants respectfully submit that each objection stands obviated. Reconsideration and withdrawal of the objection are respectfully requested.

Claim rejections – 35 U.S.C § 101

Claims 1-9 and 11 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. This rejection is respectfully traversed.

Claim 1 has been amended by reciting “an ultrasound machine used for said imaging” in order to address the rejection under 35 U.S.C § 101. Basis for this term can be found in the specification on page 13, lines 3-5, 12 and 14-16: here it is disclosed that various types of ultrasound machines can be used for the triggered imaging method claimed in claim 1 and that the ultrasound machine is operated in a certain way, i.e. pulses as described in claim 1 are initiated. Since claims 5-8 are directly or indirectly dependent on claim 1 and thus contain the same term Applicant believes that by this

amendment, the rejection under 35 U.S.C § 101 stands obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim rejections – 35 U.S.C § 102

Claims 1-5, 7, 8 and 11 stand rejected under 35 U.S.C § 102(a) as being anticipated by Krishnan et al. (US 6,340,348 B1). This rejection is respectfully traversed.

As the Examiner correctly states, Krishnan et al. disclose a method for ultrasound contrast agent imaging which can be used for perfusion of blood in cardiac tissue (abstract). In this method an ultrasound machine is operated in such a way that high pulse repetition frequency destruction pulses are used to destroy an ultrasound contrast agent that has been administered to a subject and imaging pulses different from the destruction pulses are used for the imaging. Krishnan et al. disclose that it is possible to trigger the firing of said destruction pulses by a physiological signal such as a cardiac (ECG) signal (col. 6, line 27-33), e.g. the R-wave of said ECG signal (col. 7, lines 55-58).

Krishnan et al. do not disclose, teach or suggest the use of high energy ultrasound pulses as destruction pulses, but destruction pulses which are fired at a fast rate (col. 3, lines 37-41). As described in the instant application, on page 1, line 32 – page 2, line 16, tissue perfusion can be measured by destroying an ultrasound agent with ultrasound pulses. It is apparent that higher energy ultrasound pulses are more effective in destroying the contrast agent than can be achieved with lower energy ultrasound pulses. However, the use of such high energy ultrasound pulses also bears the risk of cardiac arrhythmia. Since Krishnan et al. do not use such high energy ultrasound pulses, there is no risk of cardiac arrhythmia associated with their method.

Further, Krishnan et al. do not disclose, teach or suggest that the triggering is done in such a way that the destruction pulse coincides with the R-wave of an ECG signal. Krishna discloses that a trigger signal source recognizes the R-wave of an ECG signal

and generates a trigger signal based thereon (col. 7, lines 55-58). The trigger signal then triggers the firing of the destruction pulses. There is hence a delay between the recognition of the R-wave and the firing of the destruction pulse which again means that the destruction pulse is not fired at, i.e. does not coincide with the R-wave but is fired after the R-wave. According to the present invention, the initiation of the high energy ultrasound pulses at the R-wave is however important to avoid cardiac arrhythmia (see present application, page 9, line 8-9 and Examples Fig. 2).

In view of the above, Applicants respectfully submit that the present invention is patentably distinct over Krishna et al. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim rejections – 35 U.S.C § 103

Claim 6 stands rejected under 35 U.S.C § 103(a) as being unpatentable over Krishnan et al. (US 6,340,348 B1). This rejection is respectfully traversed.

Claim 6 depends from allowable claim 1, thus it is axiomatic that claim 6 is likewise allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

In view of the amendments and remarks hereinabove, Applicants respectfully submit that the instant application, including claims 1 and 5-8 are in condition for allowance. Favorable action thereon is respectfully requested.

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Any questions with respect to the foregoing may be directed to Applicants' undersigned counsel at the telephone number below.

Respectfully submitted,

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